

Ayman Akhras

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EDUCATION

McMaster University

Sept. 2020 – April. 2025

Bachelor of Engineering - Software Engineer Coop

GPA: 3.9

- Honours/Scholarships/Awards: McMaster Honour Award, Dean's Honour List

EXPERIENCE

Software Engineer Intern

Dec. 2023 – May. 2024

TD Bank - Payments

Toronto, ON, Canada

- Led the transition of a multi-module **Spring REST** project to **Spring Boot**, greatly improving scalability and performance while ensuring efficient integration of **XML** and **JSON** data formats within the updated framework.
- Proactively diagnosed and resolved critical issues by replicating errors from log files using **Postman** and conducting thorough debugging sessions, which improved system reliability and reduced troubleshooting time by 30%.
- Optimized **SQL** queries within the application, achieving a 15% enhancement in transaction speed for high-volume processing.
- Elevated project security and maintainability by analyzing **Maven** trees, replacing vulnerable and deprecated dependencies.

Backend Developer Intern

May. 2023 – Dec. 2023

TD Bank - Business

Toronto, ON, Canada

- Developed a **Java** program to automate the conversion of Excel inputs into **Java**, cutting processing time by 35%. Conducted **integration testing** by validating the **Java** data structures against the **JSON** output to ensure accuracy.
- Developed a containerized internal web application using **AngularJS**, **Spring Boot**, and **Docker**, significantly streamlining feature update rollout time by 50% and significantly enhancing operational efficiency.
- Engineered **OOP** class structures in **Java** for 1,464 and 80-byte EFT transaction files, ensuring modularity and augmentability.
- Retrieved **SQL** data and converted it into **JSON**, enhancing EFT file validation accuracy across TD business banking.

Undergraduate Research Developer

May. 2021– Sep. 2021

McMaster University

Hamilton, ON, Canada

- Implemented a tracking system using **Jetson Inference**, **VidStab**, **TensorFlow** in **Python** and more on a **Ubuntu-18** System
- Achieving a tracking accuracy rate of 95%, even with significant shifts in the camera's vertical and horizontal positioning
- Created onboarding documentation for the Jetson-Nano Computer Vision application on to assist future researchers transition quickly and effectively into the Agile Software Development for the Research Team of Dr. Ishwar Singh.

PROJECTS/EXTRACURRICULARS

Deep Learning for Chest X-ray Diagnosis | *SFWRENG 4G06: Capstone Project*

- Leading a team of 5 to develop a supervised learning AI model using **Python** and **PyTorch**, aimed at identifying potential lung and cardiac diseases in chest X-rays by training on open-source datasets such as ChexPert and Physionet.
- Designed a frontend with **React** and **Node.js** that effectively interacts with the backend of the AI model
- Established the infrastructure for deployment, and set up **CI/CD pipelines** to streamline development and deployment

Software and Electrical Lead | *McMaster Solar Car*

- Led the Data Acquisition and CAN BUS team, creating the schematic of the LV board in **EAGLE** and programming vehicle and hazard signals using the microchip PIC18FK40 in **MPLAB**, applying my knowledge of embedded systems.
- Developed communication between Microchips via transceivers for CAN BUS.
- Gathered and visualized input from an **ESP32** device into **InfluxDB** using **C** programming via bit manipulation.

Vice President of Events | *McMaster Deltahacks*

- Led a team of 10 to recruit workshop hosts and coordinated 11 events for a 36-hour hackathon with over 600 participants.
- Communicated with multiple companies, non-profits, and workshop hosts through meetings and emails.
- Presented to over 600 participants at the hackathon, fostering engagement and ensuring clear communication during the event.

TECHNICAL SKILLS

Coding Tools: Java, Python, C, C++, JavaScript, React, Dart, Junit, Julia, SQL, DB2, Bash, Jenkins Pipeline, AngularJS

Developer Tools: Git, Postman, Docker, AWS, Azure, Selenium, Linux, Node.js, Visual Studio, IntelliJ, Git Bash, Jupyter Notebook

Professional Skills: Object-Oriented Programming, CI/CD, SDLC, Software Engineering Design, Agile Testing, Design Patterns, Database Design & Management, Software Security, Algorithm Design, Software Architecture, Machine Learning

Productivity Software: Jira, Gerrit, Git, Confluence, Trello, GitHub, GitLab, MS Teams, Slack, Google Docs, Excel